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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,884	01/20/2004	Eric R. Schott	EQLC-P01-005	4233

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FISH & NEAVE IP GROUP
ROPES & GRAY LLP
ONE INTERNATIONAL PLACE
BOSTON, MA 02110-2624

EXAMINER

DOAN, DUC T

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,884

Applicant(s)

SCHOTT, ERIC R.

Examiner

Duc T. Doan

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/27/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-21 are in the application.

Claims 1-21 are rejected.

Information Disclosure Statement

The Information Disclosure Statements received 07/28/2003 and 11/24/2003 have not been considered. See attached PTO-1449(s).

The information disclosure statement filed 7/27/05 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the name of the inventor(s) is incorrect. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a) and 1.98.b(2).

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. [1] as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original non-provisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No.60/441810, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The prior art does not provide adequate support for partitioning storage locations into pools, partitioning storage locations into different RAID level of performances. Accordingly claims 1-7,10,11-21 are not entitled to the benefit of the prior application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7,11-17,19-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Umberger et al (US 6957433) and in view of Jacobson et al (US 5392244).

As in claim 1, Umberger describes a system for providing differentiated classes of storage (different RAID levels in a RAID storage system; I/O data transfer operation in place Umberger's column 13 lines 27-35), comprising a storage device having a plurality of storage locations and a logical block name space for organizing the storage locations, a performance process for partitioning storage locations into a plurality of regions providing different levels of performance (Umberger's column 12 lines 32-44; column 13 lines 27-32), and a mapping process for mapping the partitioned portions of the storage locations to a selected section of the logical block name space. Umberger does not explicitly describe the claim's detail of mapping storage locations. However Jacobson describes a mapping of storage locations into multiple tiers of virtual storage spaces (Jacobson's mapping of disks blocks Fig 4: #40 into virtual storage blocks views Fig 4: #52, #53). It would have been obvious to one of ordinary skill in the art at the time of invention to include the storage mapping methods and structures as suggested by Jacobson in Umberger's system that allowing data to be put into different RAID level areas on the disk, each RAID level area has an associated performance level, thereby further optimizing the performance of the overall system by organizing data into these RAID level area (Jacobson's column 4 lines 61-63).

As in claim 2, the claim recites the performance process separates the plurality of storage locations into a plurality of categories being associated with a different level of service. Jacobson clearly describes the RAID management system capable of organizing the storage into different

RAID levels allowing user and application to choose among costs, performance, reliability (Jacobson's column 5 lines 7-24).

As in claim 3, the claim recites the performance process separates the plurality of storage locations into a plurality of categories being associated with a different RAID level of performance. The claim rejected based on the same rationale as in the rejection of claim 2.

As in claim 4, the claim recites wherein the mapping process associates different portions of the logical block name space to different respective levels of RAID (Jacobson's Fig 4).

As in claim 5, the claim recites a load balancing mover process for moving data between different portions of the logical block name space. Umberger describes a method to move data between different RAID levels, column 14 lines 22-32.

As in claim 6, the claim recites the load balancing mover process includes an adaptive data placement process for moving data between storage pools to thereby improve system performance. The claim rejected based on the same rationale as in the rejection of claim 5.

As in claim 7, the claim recites wherein the load balancing process comprises an admin process for allowing an administrator to move data between different storage pools. The claim rejected based on the same rationale as in the rejection of claim 2.

Claim 11 rejected based on the same rationale as in the rejection of claim 1.

Claim 12 rejected based on the same rationale as in the rejection of claim 2.

Claim 13 rejected based on the same rationale as in the rejection of claim 3.

Claim 14 rejected based on the same rationale as in the rejection of claim 4.

Claim 15 rejected based on the same rationale as in the rejection of claim 5.

Claim 16 rejected based on the same rationale as in the rejection of claim 6.

Claim 17 rejected based on the same rationale as in the rejection of claim 7.

As in claim 19, the claim recites a system for providing differentiated classes of storage, comprising a storage device having a plurality of storage locations, a logical block name space for organizing the storage locations, and performance parameters of the storage locations that vary across the storage device, and a partitioning process for partitioning those storage locations into regions as a function variations in performance parameters. The claim rejected based on the same rationale as in the rejection of claim 1.

As in claim 20, the claim recites wherein the partitioning process selected a fixed set of partitions as a function of a selected configuration of system components. The claim rejected based on the same rationale as in the rejection of claim 1. Umberger further describes the technique to gathering performance information on services components statistically and use this information to distribute work requests to different services components (Umberger's column 5 line 35 to column 6 line 52; column 7 line 15-30).

As in claim 21, the claim recites a system according to claim 19, further including a performance process for associating partitions with different levels of performance, and a mapping process for mapping the identified partitions of the storage locations to a selected section of the logical block name space. The claim rejected based on the same rationale as in the rejection of claim 1.

Claims 8-10,18 rejected under 35 U.S.C. 103(a) as being unpatentable over Umberger et al (US 6957433), Jacobson et al (US 5392244) as applied to claims 1,11 respectively and in view of Ofek et al (US 6598134).

As in claim 8, the claim recites a process for employing the storage to provide a file system. The claim rejected based on the same rationale as in the rejection of claim 1. Jacobson shows a method that organizing data blocks in a disk array into different RAID volumes. Although Jacobson does not describes the claim's aspect of storage to provide a file system. However, Ofek describes a data map table (Ofek's Fig 2) to map data blocks of a file system being organized for example in a Fix Block Architecture (Ofek's column 4 lines 65-68). It would have been obvious to one of ordinary skill in the art at the time of invention to include the mapping methods and structures as suggested by Ofek in Umberger's system that tracks data blocks of volumes of a disk array (Ofek's column 6 line 47 to column 7 line 7), thereby allowing data locations to be quickly determined for moving among partitions on disks (Ofek's column 7 lines 27-50).

As in claim 9, the claim recites a process for providing a storage volume service. The claim rejected based on the same rationale as in the rejection of claim 8. Jacobson further describes the method to provide user and application with a storage having different RAID "volumes" and different performance levels.

As in claim 10, the claim recites wherein the mapping process creates multiple storage volumes at a selected level of performance. The claim rejected based on the same rationale as in the rejection of claim 8. Jacobson clearly describes the mapping method that partitioning disk

storage space into many RAID areas, and each area having an associated level of performance (Jacobson's Fig 4).

Claim 18 rejected based on the same rationale as in the rejection of claim 10.

Conclusion

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


3/2/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER